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ABSTRACT

The Hardnett Elementary School, some of whose activities are funded under Title I of the 1965 Elementary Secondary Education Act, serves predominately low-income pupils. Since many of these pupils were identified as severely deficient in reading, the instructional program for the 1970-71 school year focused on improving achievement in this area. In this regard, the school staff with the assistance of the staff of the Division of Research and Development evaluated the reading program with reference to its impact on the performance of pupils. The primary goal of the program was to provide more relevant activities for the pupils such that improvement in reading could be evidenced by pupils' performance on standardized tests. To assist the regular school staff in meeting the educational needs of the pupils, Hardnett received the services of the following programs: (1) Title I Program; the school was eligible for such Title I program services as reading materials and three educational aides to work with the reading program. (2) Comprehensive Instructional Program (CIP); the primary purpose of the CIP was to guide and assist with the reading programs in schools where large percentages of pupils were below grade levels in reading. During the school year, Hardnett received reading materials along with the services of a CIP coordinator. (Author/JM)

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RESEARCH AND DEVELOPMENT REPORT

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HARDNETT ELEMENTARY SCHOOL

1970-71

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PREFACE

An analysis has been made of certain performances of pupils at Hardnett Elementary School. Some of the results are reported in this publication and reflect the cooperation of the administration and faculty of the school and the staff members of the Research and Development Division.

This analysis is part of an effort to develop a method of showing accountability for the educational responsibilities of the school system to the children of Atlanta. The data contained in this developmental endeavor should not be used or quoted out of context. The report is primarily for the use of the individual school and other school personnel who have an influence on improving the effectiveness of the instructional program. It provides data which show trends and which can be used for the purpose of making further examinations for promoting pupil progress.

Jarvis Barnes
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I. RATIONALE

The Hardnett Elementary School serves predominately low-income pupils. Since many of these pupils were identified as severely deficient in reading, the instructional program for the 1970-71 school year focused on improving achievement in this area. In this regard, the school staff with the assistance of the staff of the Division of Research and Development evaluated the reading program with reference to its impact on the performance of pupils.

The primary goal of the program was to provide more relevant activities for the pupils such that improvement in reading could be evidenced by pupils' performance on standardized tests. In order to provide more relevant activities for the pupils the school staff conducted a general survey of the school and community. Here effort was made to determine, in general, the socio-economic status of the community, the community mobility, and specific areas wherein pupils showed greatest educational needs.

Relative to socio-economic status of the community, it was noted that the occupations of parents in the community ranged from maids and cab drivers to semi-skilled factory workers. In addition, over 75 per cent of the pupils, according to family income, were determined eligible for either free or partially free lunches. Further, according to a Title I school survey, Hardnett ranked among the schools having the highest percentages of pupils from low-income families.

Family mobility was another area of concern. Over a four-year period, 1967-71, the percentage of the school population which moved either in or out ranged from 20 to 35 per cent. This coupled with the fact that most of the pupils moving into the area were from poor rural communities was believed to have had a significant impact on the achievement of the pupils. Of primary concern here was, seemingly, social adjustment relative to the new urban setting and difference in instructional materials.

School attendance was not a major problem. According to attendance data for the two-year period, 1969-71, Hardnett School had a per cent of attendance of 90, as compared with the city-wide per cent of 91 and 92 per cent for the same period. However, in assessing pupil achievement, it was noted that the

pupils scored significantly below the city-wide norm on the Metropolitan Readiness Tests (MRT) and the Metropolitan Achievement Tests (MAT).

The mean performance for pupils entering first grade for the 1970-71 school year was "D" on the MRT, a level at which the pupils are expected to have difficulty with first grade work. Pupil performance on the MAT indicated that the pupils of grades one through seven were from six months to three years below grade placement.

Supporting Services

To assist the regular school staff in meeting the educational needs of the pupils, Hardnett received the services of the following programs:

A. Title I Program

Since the majority of the pupils at Hardnett Elementary School were from low-income families, it was determined eligible for Title I program services. These included reading materials, in addition to those provided by the regular program funds, and three educational aides to work with the reading program. The educational aides worked under the direction of the classroom teacher to provide reinforcement for pupils who had the greatest deficiences in reading. Activities for such pupils were often provided in small group or individual teaching situations within the regular classroom setting.

B. Comprehensive Instructional Program (CIP)

The primary purpose of the Comprehensive Instructional Program (CIP) was to guide and assist with the reading program in schools where large percentages of pupils were below grade levels in reading. The staff of the program believed that such assistance would enable the pupils of grades one through three to make a year's growth in reading. As a part of this program, the principal and one teacher from Hardnett attended an inservice training session during the summer, 1970.

During the school year, Hardnett received reading materials along with the services of a CIP coordinator. The coordinator worked through the area office such that her services were available to several schools.

Her specific services to Hardnett were in the area of inservice training for teachers of grades one through three. During these sessions the teachers were given assistance in the writing of behavioral objectives, developing reading activities, and interpreting test results.

II. NEEDS OF PUPILS

The needs of the pupils as identified by the staff at Hardnett are as follows:

A. To develop a more positive attitude toward self and others.

B. To experience success in performing school tasks.

C. To increase their attention span.

D. To learn to follow directions.

E. To develop proficiency in oral and written communication.

F. To develop skills in comprehension.

G. To develop skills in word attack and word analysis.

H. To develop a skill of a sense of self-respect.

III. GOALS OF THE PROGRAM

A. To provide an atmosphere wherein pupils may feel free to express themselves, think creatively, and develop appreciation of school in ways which can enrich their life experiences.

B. To provide learning situations wherein pupils may experience feelings of pride as a result of successful performance of assigned tasks.

C. To provide learning situations wherein pupils are able to acquire a mastery of identified information and skills.

D. To provide learning activities comparable with the needs and abilities of the pupils.

E. To provide a variety of activities designed to encourage pupils to develop basic reading skills.

IV. PROGRAM OBJECTIVES

The following objectives served to direct the instructional activities provided to the pupils of grades one through three:

A. All first grade pupils who scored "C" or above on the Metropolitan Readiness Tests (MRT) will score 1.6 or above on the Metropolitan Achievement Tests (MAT).

B. Pupils of grades two and three will gain one month in reading for each month in the program.

In addition to the above objectives, an assessment was made to determine the growth in reading made by the pupils of grades four through seven. Although the teachers of these grades did not receive the services of the Comprehensive Instructional Program (CIP) they did receive assistance from the three Title I educational aides during the reading periods. Accordingly, it was hoped that these pupils would also show one month's gain for each month in the program.

V. MANAGEMENT AND CONTROL

Since Hardnett Elementary School did not have a lead teacher, the principal directed the instructional program with the assistance of a Comprehensive Instructional Program (CIP) coordinator of kindergarten through seventh grade. The teachers planned with the principal as total group and two subgroups. These included the teachers of kindergarten through third grade (primary) and the teachers of grades four through seven (intermediate). With the assistance of the Title I aides, departmental meetings were scheduled during the regular school day.

Teachers of the primary pupils (grades kindergarten through third) met for one hour each on Tuesday and Thursday of each week to evaluate and develop activities needed for the reading program. These included developing grouping procedures,

reviewing reading materials and interpreting test data. Meetings of the teachers of the intermediate grades were scheduled for one hour each on Monday and Wednesday of each week.

Some assistance in the area of reading was provided to the teacher of intermediate grades by the staff of the area office at the request of the principal. In addition, a research assistant assisted the teachers in developing measurable performance objectives for the program evaluation.

The School Organizational Climate Index

Effort was made to assess the school climate at Hardnett along with the climate of 13 other elementary schools using the Organizational Climate Index (OCI). The Organizational Climate Index (OCI), developed by George Stern of Syracuse University and his associates, were administered to a randomly selected sample of teachers at that school. Accordingly, these teachers responded true or false, as applicable to their individual situation to three hundred statements. The data here were compiled on 30 of Murry's need press scales (see Table 1).

TABLE 1

DEFINITIONS OF SCALES FROM WHICH DEVELOPMENT PRESS AND CONTROL PRESS ARE DERIVED IN THE ORGANIZATIONAL CLIMATE INDEX

1. Abasement-assurance: self-deprecation versus self-confidence.
2. Achievement: striving for success through personal effort.
3. Adaptability-defensiveness: acceptance of criticism versus resistance to suggestion.
4. Affiliation-rejection: friendliness versus unfriendliness.
5. Agression-blame avoidance: hostility versus disorganization.
6. Change-sameness: flexibility versus routine.
7. Conjunctivity-disjunctivity: planfulness versus organization.
8. Counteraction-inferiority avoidance: restriving after failure versus withdrawn.
9. Deference-restriveness: respect for authority versus rebelliousness.
10. Dominance-tolerance: ascendance versus forebearance.
11. Ego Achievement: striving for power through social action.
12. Emotionality-placidity: expressiveness versus restraint.
13. Energy-passivity: effort versus inertia.
14. Exhibitionism-inferiority avoidance: attention-seeking versus shyness.
15. Fantasied achievement: daydreams of extraordinary public recognition.

TABLE 1 (cont'd)

16. Harm avoidance -- risk-taking: fearfulness versus thrill seeking.
17. Humanities-social sciences: interests in the humanities and the social science.
18. Impulsiveness-deliberation: impetuosity versus reflection.
19. Narcissism: vanity.
20. Nuturance-rejection: vanity.

21. Objectivity-projectivity: detachment versus superstition (AI) or suspicion (CI).
22. Order-disorder: compulsive organization of details versus carelessness.
23. Play-work: pleasure-seeking versus purposefulness.
24. Practicalness-impracticalness: interest in practical activities versus indifference.
25. Reflectiveness: introspective contemplation.

26. Science: interest in the natural sciences.
27. Sensuality-puritanism: interest in sensory and aesthetic experiences.
28. Sexuality-prudishness: heterosexual interests versus inhibitions of heterosexual interests.
29. Supplication-autonomy: dependency versus self-reliance.
30. Understanding: intellectuality.

A. Development Press

1. Intellectual climate -- This factor describes a concern with intellectual activity, social action, and personal effectiveness. It is based on the scales for humanities, social science, science, reflectiveness, understanding, fantasied achievement, exhibitionism, and change. A school that scores high on this factor is one in which the teachers feel that there is a high degree of intellectuality, heterosexual interests, flexibility, and attention seeking.

2. Achievement standards -- This is the factor reflecting press for achievement. Schools high on this factor stress hard work, perseverance, and a total day-by-day commitment to institutional purposes. It is defined by counteraction, energy, achievement emotionality, and ego achievement.

3. Practicalness -- This factor suggests an environmental dimension of practicality tempered with friendliness. It is defined by practicalness and nurturance. A school that scores high on this factor is one in which the teachers feel there is a high interest in practical activity and a desire for helping others.

4. Supportiveness -- This factor deals with aspects of the organizational environment that respect the integrity of the teacher as a person, but the implication is that dependency needs must be supported rather than personal autonomy emphasized. It might be considered a measure of democratic paternalism. The scales defining it are assurance, tolerance, objectivity, affiliation, conjunctivity, supplication, blame avoidance, harm avoidance, and nurturance. A school that scores high on this factor is one in which the teachers feel a high degree of self-confidence, friendliness, and planfulness.

5. Orderliness -- The components of this factor are concerned with the press for organizational structure, procedure, orderliness, and a respect for authority. Conformity to community pressures and an effort to maintain a proper institutional image probably are also concomitants of a high score on this factor. It is based on order, narcissism, adaptability, conjunctivity, deference, and harm avoidance. A school that scores high on this factor is one in which the teachers feel there is a compulsive organization of details, acceptance of criticism, respect for authority, vanity, and planfulness.

B. Control Press

In addition to the reflection of factors 1 and 2 under "development press," control press involves:

Impulse control -- This factor implies a high level of constraint and organizational restrictiveness. There is little opportunity for personal expression or for any form of impulsive behavior. It is based on work instead of play; prudishness versus sexuality; aggression versus blame avoidance; impulsiveness versus deliberation; emotionality versus placidity; and exhibitionism versus inferiority avoidance. A school that scores high on this factor is one in which the teachers feel there is a high degree of purposefulness, heterosexual interests, hostility, impeturosity, expressiveness, and restriving after failure.

Data relative to Hardnett Elementary School's climate are presented in Table 2. This data show how the organizational climate at Hardnett ranked among the 14 schools included in the study. It should be noted here that the mean for the 14 schools was 50 and the standard deviation was 10. In addition, according to the definition of the six factors listed previously, the higher the score the more open the school climate while the low scores suggest a closed climate. The open climate, according to Halpin and Croft, is one where the staff was characterized by caring among members. Further, the closed climate was characterized as one wherein the members felt little commitment to other members within the group. According to Halpin and Croft, the school administrator is the main variable in determining the school climate.[1]

According to the profile of Hardnett (see Table 2), the teachers feel that the school climate is relatively closed with reference to three of the six factors. As shown, the school scored low (below the mean of 50) in intellectual climate, orderliness, and supportiveness. Achievement standards and impulse control scored slightly higher while practicalness scored highest. Accordingly, this factor ranked one among the 14 schools included in this study. Of significance relative to Hardnett's climate assessment is the extreme variation in the scoring on the six factors. It should be noted here that no effort was made to relate achievement with school climate. However, these data may serve as a point of reference for future studies. These would perhaps be designed to determine if there is a positive relationship between achievement and the extent to which the teacher perceived openness in the school climate.

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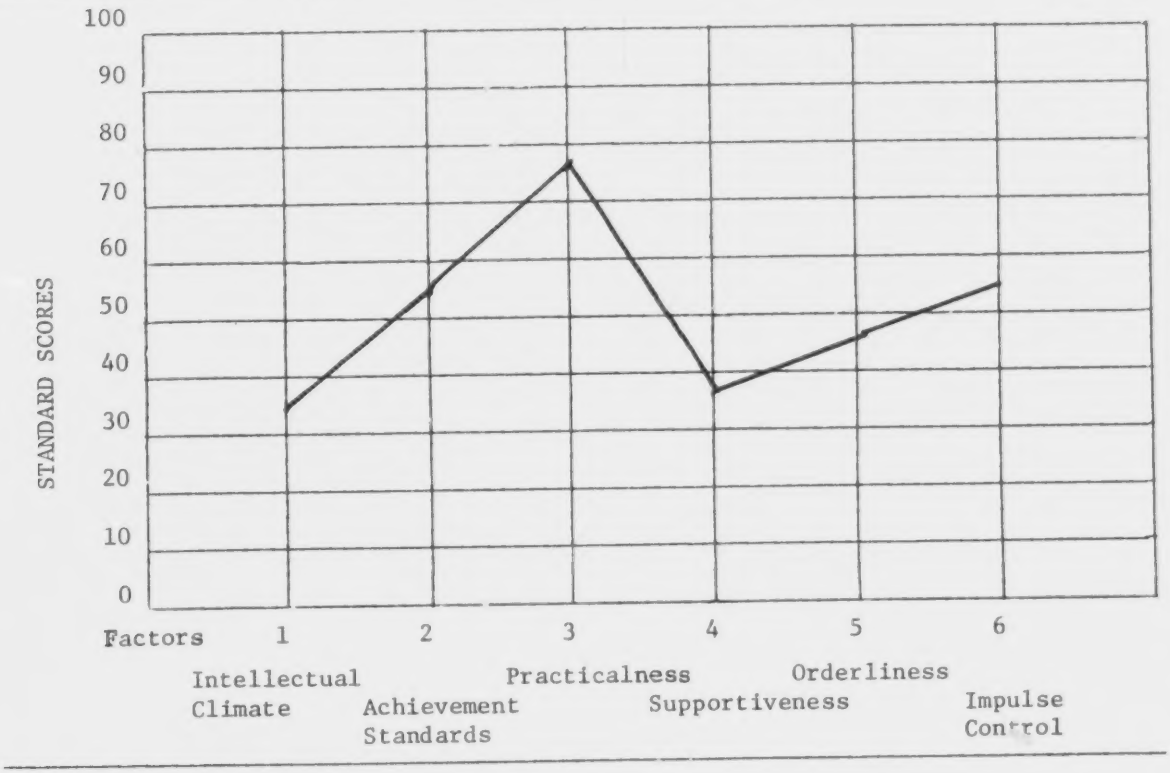
[1] Halpin and Croft. The Organization Climate of Schools. Cited by Garry Walz and Juliet Miller. "School Climate and Student Behavior: Implications for Counselor Role," Personnel and Guidance Journal, Part 2, (1969) p. 864.

TABLE 2

SCHOOL PROFILE OF STANDARD FACTOR SCORES ON
THE ORGANIZATIONAL CLIMATE INDEX



VI. PROCESS

The basal approach to the teaching of reading was employed by teachers of grades one through seven. The pupils of grades one through three were grouped, according to their performance on the Comprehensive Instructional Program (CIP) diagnostic tests, across grade levels for a two and one-half hour period of language arts instruction daily. Of the two and one-half hour

period approximately one hour was scheduled for teaching specific reading skills. The same procedure of grouping was utilized in grades four through seven. The major differences between the primary and intermediate groups were that the CIP diagnostic tests were not administered to pupils of grades four through seven, and the CIP coordinator did not assist the teacher of these grade levels.

The three educational aides paid by Title I assisted teachers at all grade levels. The primary concern was to provide compensatory reading activities for the most educationally deprived pupils of all grade levels. These activities were for the most part provided within the regular classroom setting in individual or small group teaching situations.

The basal readers included in the program were the McMillian and Scott-Foresman Series. Other supplementary materials included reading laboratories, language kits, reading games by Science Research Associates, Betts, and the Ginn Company.

VII. EVALUATION

The Metropolitan Readiness Tests (MRT) were administered to all first grade pupils as the pretest in October, 1970.

The Metropolitan Achievement Tests (MAT), Primary Battery, Form G, were administered as the posttest to all first grade pupils in April, 1971.

Appropriate forms of the Metropolitan Achievement Tests (MAT) were administered to all pupils of grades two through seven as pretest and posttest in October, 1970, and April, 1971, respectively.

VIII. FINDINGS

In October, 1970, all first graders were administered the Metropolitan Readiness Tests (MRT) as the pretest. The Metropolitan Achievement Tests (MAT) was used as the posttest in April, 1971. For evaluative purposes, only the scores of the first grade pupils who took both the pretest and posttest were used. Accordingly, only 25 pupils took both tests. As shown in Table 3, of this 25 only nine scored "C" or above on the MRT. According to the objective, pupils who scored "C" or above were expected to score at least 1.6 on the posttest, MAT. However, of the nine pupils included here, only one performed as expected. Further, of the 16 pupils who scored "D" or below 1 performed at level 1.6. According to the mean grade of the pretest, the pupils were seemingly not ready for first grade work. Consequently, the mean score for the posttest reflects the apparent limited experiental backgrounds of these pupils. However, according to test performance, nine of these pupils should have been able to score at 1.6 or above.

TABLE 3

COMPARISON BETWEEN THE METROPOLITAN ACHIEVEMENT TESTS SCORES OF FIRST GRADE PUPILS WHO SCORED "C" OR ABOVE ON THE METROPOLITAN READINESS TESTS WITH PUPILS WHO SCORED "D" OR BELOW

Group	Number	Number in Group Who Scored 1.6 or Above
Scored "C" or Above on the Metropolitan Readiness Tests	9	1
Scored "D" or Below on the Metropolitan Readiness Tests	16	1
Totals	25	2

	Mean
Pretest Metropolitan Readiness Tests	- 37.9 (D)
Posttest Metropolitan Achievement Tests	- 1.3

Data relative to the performance of the second grade pupils on the Metropolitan Achievement Tests (MAT) are presented in Tables 4, 5, and 6. In Table 4 the coefficients of correlation and *t* ratios were used to determine the relationship between achievement and attendance. The data of pupil performance on five subtests along with the attendance data of the pretest and posttest groups were included. According to these data, there was a significant relationship between attendance and the level of performance of the pupils of the posttest group in that pupils who attended school more performed better. This significant relationship does not exist in many other schools. Apparently, additional attention should be given to assisting those who are irregular in attendance.

TABLE 4

CORRELATION BETWEEN METROPOLITAN ACHIEVEMENT TESTS SUBTEST SCORES (PRETEST AND POSTTEST) AND ATTENDANCE
GRADE 2
N = 16

	Coefficients of Correlation			*t* Ratio		
	Pretest	Posttest	Gain	Pretest	Posttest	Gain
Word Knowledge vs. Attendance	0.187	0.559*	0.624**	0.71	2.52*	2.99*
Word Analysis vs. Attendance	0.161	0.179	0.160	0.61	0.68	0.61
Reading vs. Attendance	-0.009	0.543*	0.656**	-0.34	2.42*	3.25**
Total Reading vs. Attendance	0.079	0.560*	0.580*	0.30	2.53*	2.66*
Mathematics vs. Attendance	0.331	0.529*	0.525*	1.26	2.25*	2.23*

*Significant at the .05 level.

**Significant at the .01 level.

Table 5 shows the frequency analysis of total reading gain of the second grade pupils at Hardnett. These data show the gains in months on the Metropolitan Achievement Tests (MAT) of the pretest/posttest group (N =16). As shown, the gains made in reading ranged from a negative gain of approximately 8 months to a positive gain of 10 months. In addition, of the 16 pupils who took both the pretest and the posttest approximately eight (one-half) made the expected gain.

TABLE 5

FREQUENCY ANALYSIS OF TOTAL READING GAIN
ON METROPOLITAN ACHIEVEMENT TESTS*
GRADE 2
N = 16

Number	Per Cent	Gain (in Months)
1	6.25	(-8) - 0
5	31.25	1 - 2
2	12.50	3 - 4
2	12.50	5 - 6
5	31.25	7 - 8
1	6.25	9 - 10

*There was a period of approximately six months between pretest and posttest.

Table 6 compares the performance of the pupils who took both the pretest and posttest (N = 16), with pupils who took the pretest only (N = 6) and with pupils who took the posttest only (N = 7). The performance on the pretest indicated that while pupils who took only the pretest tended to score higher in word knowledge and word analysis, the pretest/posttest group scored higher than the pretest only group on the remaining three subtests. However, performance of either group did not differ significantly. The posttest performance of the pretest/posttest group was compared with posttest performance of the posttest only group. Here the pretest/posttest group scored higher on all five of the subtests. Since the differences in performance was not statistically significant it may be assumed that the two groups performed similarily. Consequently, mobility did not seem to influence the differences in achievement.

TABLE 6

COMPARISON OF METROPOLITAN ACHIEVEMENT TESTS SUBTEST SCORES OF PUPILS TAKING PRETEST OR POSTTEST ONLY WITH SUBTEST SCORES OF PUPILS TAKING BOTH PRETEST AND POSTTEST
GRADE 2

	Pretest Only			Pretest/Posttest				Posttest Only			Pretest/Posttest			
	N	Mean	S.D.	N	Mean	S.D.	*t* Score	N	Mean	S.D.	N	Mean	S.D.	*t* Score
Word Knowledge	6	1.75	0.14	16	1.68	0.35	0.17	7	1.66	0.34	16	2.40	0.96	-0.20
Word Analysis	6	1.71	0.14	16	1.48	0.44	0.62	7	1.56	0.28	16	2.28	0.83	-0.22
Reading	6	1.48	0.76	16	1.68	0.58	-0.63	7	1.63	0.49	16	2.03	0.55	-0.17
Total Reading	6	1.50	0.82	16	1.62	0.35	-0.11	7	1.92	0.74	16	2.23	0.60	-0.19
Mathematics	7	1.37	0.77	16	1.70	0.57	-0.67	7	1.67	0.40	16	2.11	0.55	-0.11

Data for grade three are presented in Tables 7, 8, and 9. Table 7 shows a frequency analysis of the total reading gain of the third grade pupils at Hardnett. The data are relative to only those third graders who took both the pretest and the posttest (N = 22). The total reading gain made by this group ranged from approximately one to twelve months. In addition, about one-half of this group gained six months or more in total reading.

TABLE 7

FREQUENCY ANALYSIS OF TOTAL READING GAIN
ON METROPOLITAN ACHIEVEMENT TESTS*
GRADE 3
N = 22

Number	Per Cent	Gain (in Months)
1	5.0	1 - 2
6	30.0	3 - 4
5	25.0	5 - 6
7	35.0	7 - 8
1	5.0	11 - 12

*There was a period of approximately six months between pretest and posttest.

Correlations were run between pretest, posttest, and gain scores on each of the subtests and the per cent of attendance for those pupils who took both the pretest and the posttest. According to these data, there was no correlation between performance and attendance on seven of the nine subtests indicating that a high percentage of attendance in school did not necessarily improve performance (see Table 8). However, on math computations versus attendance and math concepts versus attendance the data showed a negative significant relationship. The pretest and posttest performance of pupils who attended school less scored highest.

TABLE 8

CORRELATION BETWEEN METROPOLITAN ACHIEVEMENT TESTS SUBTEST SCORES (PRETEST AND POSTTEST) AND ATTENDANCE
GRADE 3
N = 22

	Coefficients of Correlation			t Ratio		
	Pretest	Posttest	Gain	Pretest	Posttest	Gain
Word Knowledge vs. Attendance	-0.088	0.014	0.158	-0.37	0.06	0.68
Word Analysis vs. Attendance	0.245	-0.146	-0.429	1.07	-0.63	-2.01
Reading vs. Attendance	-0.132	-0.107	0.015	-0.55	-0.45	0.06
Spelling vs. Attendance	0.265	0.191	-0.055	1.13	0.80	-0.23
Math Computations vs. Attendance	-0.466*	0.140	0.655**	-2.23	0.60	3.67
Math Concepts vs. Attendance	-0.396	-0.469*	-0.097	-1.83	-2.25	-0.42
Math Problems vs. Attendance	-0.275	-0.291	-0.207	-1.21	-1.29	-0.90
Total Math vs. Attendance	-0.379	-0.126	0.286	-1.83	-0.57	1.34
Total Reading vs. Attendance	-0.148	-0.045	0.215	0.64	-0.19	0.93

*Significant at the .05 level.
**Significant at the .01 level.

The performance of the pretest/posttest group on the Metropolitan Achievement Tests (MAT) was compared with the third grade pupils who took the pretest only and with the third grade pupils who took the posttest only (see Table 9).

TABLE 9

COMPARISON OF METROPOLITAN ACHIEVEMENT TESTS SUBTEST SCORES OF PUPILS TAKING PRETEST OR POSTTEST ONLY WITH SUBTEST SCORES OF PUPILS TAKING BOTH PRETEST AND POSTTEST
GRADE 3

	Pretest Only			Pretest/Posttest				Posttest Only			Pretest/Posttest			
	N	Mean	S.D.	N	Mean	S.D.	*t* Score	N	Mean	S.D.	N	Mean	S.D.	*t* Score
Word Knowledge	6	1.93	1.27	20	2.02	0.44	-0.27	10	2.68	0.79	20	2.66	0.46	0.11
Word Analysis	6	1.80	1.29	20	1.88	0.51	-0.22	10	2.71	0.87	20	2.70	0.50	0.06
Reading	6	1.68	1.00	19	1.99	0.48	-1.04	11	2.44	0.89	19	2.54	0.52	-0.41
Spelling	6	1.87	2.19	19	2.06	0.72	-0.34	11	2.88	1.21	19	2.97	0.88	-0.23
Math Computation	6	1.70	1.18	20	2.42	0.77	-1.78	10	2.64	0.51	20	2.97	0.69	-1.34
Math Concepts	6	1.70	1.11	20	2.58	0.77	-2.22	10	2.59	1.00	20	2.82	0.81	-0.67
Math Problems	6	1.83	1.68	20	2.39	0.34	-1.44	10	2.40	0.75	20	2.57	0.71	-0.59
Total Math	6	2.60	1.49	22	2.61	0.94	-0.09	8	2.55	0.79	22	2.67	0.58	-0.47
Total Reading	6	1.80	1.11	20	1.96	0.45	-0.52	10	2.58	0.79	20	2.55	0.42	0.14

Although the pupils who took both the pretest and the posttest performed better on the pretest than the pupils who took the pretest only on all nine subtests, the difference in performance was not significant. Relative to posttest performance, the pupils who took both the pretest and the posttest performed better on six of the nine subtests as evidenced by mean differences. However, according to the t score there was no significance in the performance of the two groups.

Table 10 shows the comparison of mean gains in reading for pupils in grades two through seven, the per cent of expected gain, gain score t test, per cent of attendance, and coefficient of correlation between attendance and reading achievement. As previously stated, the pupils were expected to gain 6.3 months in reading. According to the mean performance in reading for grades two through seven, this objective was not realized. The gains made by the various grades ranged from six months to one month. According to the results of the t test, the gains made by grades two through five were significant. The gain of one month made by the sixth grade pupils and the five month gain made by the seventh grade were not significant. It should be noted that the insignificant gain made by the seventh grade was due to the wide range in performance among these pupils.

The per cent of attendance of some of the grades exceeded or equaled the city-wide per cent of attendance for all grades. Seemingly, this high percentage of attendance did not influence achievement. While pupils in grades with high percentages of attendance made significant gains in some instances, the grade level with the highest per cent of attendance (grade 6) made the least gain. Further, the third grade pupils, as indicated by the per cent of attendance, attended school less and performed highest.

TABLE 10

COMPARISON OF METROPOLITAN ACHIEVEMENT TESTS MEAN READING PRETEST/POSTTEST SCORES, GAIN, PER CENT OF EXPECTED GAIN, GAIN SCORE *t* TEST, PER CENT OF ATTENDANCE AND COEFFICIENT OF CORRELATION BETWEEN READING AND ATTENDANCE

Grade	Number of Pupils	Mean Score		Gain in Months	Per Cent of Expected Gain	*t* Test	Per Cent of Attendance	*r*
		Pretest	Posttest					
2	16	1.71	2.11	4	64.9	2.06*	91.2	0.579
3	20	1.96	2.55	6	94.4	4.40**	93.3	0.215
4	19	2.96	3.45	5	77.7	2.20*	95.5	-0.271
5	14	3.45	4.03	6	91.8	2.50*	95.3	-0.002
6	31	4.73	4.86	1	22.0	0.29	97.2	0.078
7	25	3.69	4.16	5	74.9	1.60	94.8	0.064

*Significant at the .05 level.
**Significant at the .01 level.

IX. COST EFFECTIVENESS

Cost analysis of reading gains was done in an effort to determine the relative cost for the amount of gain made at each grade level. These data are presented in Table 11. Here the average daily attendance (ADA) of the total school, the ADA by grade level, and the ADA for the pretest/posttest population was used to prorate cost of gains made by pupils of grades two through seven.

Funds provided to Hardnett were from general and special budgets. Included under the general budget are expenditures for salary and non-salary including the Comprehensive Instructional Program (CIP) stipends paid to the principal and teachers for their participation in the reading workshop. The amount paid by CIP under salary was prorated across grade levels as were the non-salary items, since the experiences received by the principal were shared with staffs of all grade levels. In addition, salary and non-salary costs were prorated according to the per cent of each grade's pretest/posttest ADA of grades from which the population was taken.

Specific funds including Title I and Title II were also prorated according to the ADA across grade levels. This procedure seemed appropriate since the Title I aides worked with all teachers and since library materials were provided to pupils of all grade levels. It should be noted that the gains for each grade level, estimated cost for gains made, and the projected cost for one-unit-of-gain (10 months) were based on data of the pretest/posttest population which constituted less than one-half of the total school population. Also of significance, was that the ADA for the pretest/posttest population was much less than the ADA for some grade levels. This is especially evident for grades two and five.

As may be noted, the per pupil cost, according to data and procedures used, was the same for all grade levels. However, of special significance is the variations in the rate of reading gain among the various grade levels. Pupils of the third and fifth grades made the greatest gain. The rate of gain of the second grade pupils was less than the rate of gain for all other grades except the sixth. Here the rate of reading gains was 22 per cent. Seemingly,

an appropriate conclusion here would be that the amount of expenditures at the various grade levels, beyond a certain point, did not influence the amount of gain made by the pupils. This is to say that if the per pupil cost at Hardnett was in fact the same or approximately the same for pupils of all grade levels, then an extensive evaluation of the instructional program is needed. Such an evaluation may include taking a look at the teaching procedures, materials, and other variables which may affect pupils' achievement.

As may be noted, pupils at the various grade levels are considerably below grade level. The greatest difference between grade placement and reading levels existed at the seventh grade level. The pupils here should score, according to grade placement, at approximately the eighth grade level. However, according to these data, they are approximately four years below grade placement. Differences between reading level and grade placement is also evident among pupils of all other grades but to a lesser extent.

The projected cost for 10 months gain or one-unit-of-gain in reading ranged from $744 for the third grade to $3,177 for the sixth grade. The determining factor was the rate of reading gain made by pupils of the various grade levels. It follows that the projected cost for one-unit-of-gain was directly related to the reading rate. Therefore, the higher the rate, the lower the cost. For example, the rate of reading gain for the third grade was 94 per cent and the cost of one-unit-of-gain was $744. However, since the sixth grade pupils made only 22 per cent of the expected gain the cost for one-unit-of-gain at this grade level would be $3,177. In general, pupil progress did not seem to correlate with the amount of money spent.

X. COMMUNICATION AND DISSEMINATION

Following conferences with the principal, the research assistant met with the teachers to discuss performance objectives and procedures to be utilized in evaluating the objectives. A first grade teacher who served as chairman submitted the program objectives, a prospectus was developed and reviewed by the school staff. Periodic visits were made to the school by the research assistant for the purpose of gathering information.

TABLE 11

COST ANALYSIS OF READING GAINS BY GRADES TOTAL
SCHOOL AVERAGE DAILY ATTENDANCE (ADA)
GRADES K - 7
N = 278

	Grades						
	Second	Third	Fourth	Fifth	Sixth	Seventh	Total
ADA for Grade	29	28	25	26	36	25	169
ADA Pretest/Posttest Population	15	19	18	14	30	24	120
Per Cent of Total Population	5.4	6.8	6.5	5.0	10.8	8.6	43.1
Expenditures - Pretest/Posttest Population							
A. General Funds							
1. Regular							
a. Salary	$ 7,669	$ 9,694	$ 9,203	$ 7,178	$15,338	$12,270	$ 61,352
b. Non-Salary	1,947	2,461	2,337	1,823	3,894	3,115	15,577
c. Total	$ 9,616	$12,155	$11,540	$ 9,001	$19,232	$15,385	$ 76,929
2. CIP							
a. Salary	$ 32	$ 41	$ 39	$ 30	$ 65	$ 52	$ 259
b. Non-Salary	33	41	39	30	65	52	260
c. Total	$ 65	$ 82	$ 78	$ 60	$ 130	$ 104	$ 519
3. Total General Funds							
a. Salary	$ 7,701	$ 9,735	$ 9,242	$ 7,208	$15,403	$12,322	$ 61,611
b. Non-Salary	1,980	2,502	2,376	1,853	3,959	3,167	15,837
c. TOTAL GENERAL FUNDS	$ 9,681	$12,237	$11,618	$ 9,061	$19,362	$15,489	$ 77,448
B. Special Funds							
1. Title I	$ 101	$ 128	$ 121	$ 95	$ 202	$ 162	$ 809
a. Salary	662	837	794	620	1,324	1,059	5,296
b. Non-Salary	$ 763	$ 965	$ 915	$ 715	$ 1,526	$ 1,221	$ 6,105
c. Total							
2. Title II (libraries)							
Non-Salary	$ 41	$ 52	$ 49	$ 38	$ 82	$ 66	$ 328
3. Total Special Funds							
a. Salary	$ 101	$ 128	$ 121	$ 95	$ 202	$ 162	$ 809
b. Non-Salary	703	889	843	658	1,406	1,125	5,624
c. TOTAL SPECIAL FUNDS	$ 804	$ 1,017	$ 964	$ 753	$ 1,608	$ 1,287	$ 6,433

TABLE 11 (Cont'd)

	Grades						
	Second	Third	Fourth	Fifth	Sixth	Seventh	Total
Total Expenditures - Pretest/Posttest Population							
A. Salaries	$ 7,802	$ 9,863	$ 9,363	$ 7,303	$15,605	$12,484	$ 62,420
B. Non-Salaries	2,683	3,391	3,219	2,511	5,365	4,292	21,461
C. TOTAL EXPENDITURES - PRETEST/POSTTEST POPULATION	$10,485	$13,254	$12,582	$ 9,814	$20,970	$15,776	$ 83,881
Cost Per Pretest/Posttest Pupil							Overall Average
A. General Funds							
1. Salary	$ 513	$ 512	$ 513	$ 513	$ 513	$ 513	$ 513
2. Non-Salary	132	132	132	132	132	132	132
3. TOTAL GENERAL FUNDS	$ 645	$ 644	$ 645	$ 645	$ 645	$ 645	$ 645
B. Special Funds							
1. Salary	$ 7	$ 7	$ 7	$ 7	$ 7	$ 7	$ 7
2. Non-Salary	47	47	47	47	47	47	47
3. TOTAL SPECIAL FUNDS	$ 54	$ 54	$ 54	$ 54	$ 54	$ 54	$ 54
Total Expenditures - Pretest/Posttest Pupil							
A. Salary	$ 520	$ 519	$ 520	$ 520	$ 520	$ 520	$ 520
B. Non-Salary	179	179	179	179	179	179	179
C. TOTAL EXPENDITURES - PRETEST/POSTTEST PUPIL	$ 699	$ 698	$ 699	$ 699	$ 699	$ 699	$ 699
Rate of Reading Gain (Per Cent)	64	94	78	92	22	75	77
Ending Reading Level (Grade)	2.11	2.55	3.45	4.03	4.86	4.16	
Projected Cost for One-Grade-Unit Gain							
A. General Funds	$ 1,008	$ 685	$ 827	$ 701	$ 2,932	$ 860	$ 838
B. Special Funds	84	59	69	59	245	72	70
C. TOTAL PROJECTED COST FOR ONE-GRADE-UNIT GAIN	$ 1,092	$ 744	$ 896	$ 760	$ 3,177	$ 932	$ 908

The final report was submitted to the school and to the area office for review and then circulated throughout the school system.

XI. CONCLUSIONS

The primary objective of the instructional program at Hardnett was to improve reading achievement. In this regard, effort was made to provide special reading activities such that (1) first grade pupils who scored "C" or above on the Metropolitan Readiness Tests (MRT) would perform at 1.6 on the Metropolitan Achievement Tests (MAT) and (2) pupils of grades two through seven would show a gain of one month for each month in the program during the period between pretest and posttest as measured by appropriate forms of the MAT. Accordingly, the expected gain for pupils in grades two through seven was 6.3 months (the duration between the pretest and posttest period).

As a total group, the performance of the first grade on the MRT indicated the pupils were not ready for first grade. The mean grade for the total group was "D" on the MRT (pretest) while, the mean score on the posttest was 1.3 for the total group. However, pupils within this group scored "C" or above on the pretest. The expected level of performance on the posttest for this group was 1.6. According to the data, the pupils did not perform as expected. A comparison between the posttest scores of pupils who scored "C" or above on the pretest and the scores of pupils who scored "D" or below indicated that the two groups performed similarly. Therefore, it appears that the pretest grades did not predict the pupils' posttest performance.

Pupils in grades two and three did not perform as expected. As a total group, the second grade pupils gained four months, while the third grade pupils gained six months. The gains made by both grades were significant.

The reading gains made by the pupils in grades four and five were similar to those made by pupils in the second and third grades.

The seventh grade pupils gained five months as a total group. The gain here was not significant due to the wide range in individual pupil performance.

The one month gain made by the sixth grade was not significant.

The sharp increase in mobility among the pupils did not affect achievement. Comparisons were made of the performances of the pupils of the pretest only, and the pretest/posttest groups; also the posttest only group with the pretest/posttest group. There was no significant difference in the performance of the two groups.

In general, there was no relationship between attendance and achievement. However, the data showed a negative correlation between math performance and attendance for the third grade pupils.

The per cent of attendance at Hardnett equaled or exceeded the city-wide per cent of attendance for all grade levels. This, seemingly, had little impact on achievement. Of significance here, is that the sixth grade pupils had the highest per cent of attendance (97.2 per cent) and gained only one month.

Title I provided the services of teacher aides along with reading materials and supplies. The services of the aides as well as the materials were utilized by all grades.

The Comprehensive Instructional Program (CIP) provided training during the summer for the principal and one teacher. Their experiences were shared with all grades. However, during the school year, CIP services were concentrated in grades one through three. This included diagnostic testing and inservice training provided by a CIP coordinator.

In assessing the impact of the CIP services during the school year, it seems appropriate to conclude that this service did not necessarily improve achievement. As previously stated, the first graders did not perform as expected. The second and third graders did not perform as expected but made significant gains. It must be noted that the gains here were not unique in that similar gains were made by pupils in grades four, five, and seven.

The school climate, according to the Organizational Climate Index (OCI), was relatively closed on three of the six factors. These were intellectual climate, orderliness, and supportiveness. It was relatively open on impulse control and definitely open on practicalness. No effort was made to determine the relationship, if any, between achievement of the pupils and the school climate.

The estimated per pupil cost was the same for all grade levels while the projected cost for one-unit-of-gain (10 months) varied proportionately with the amount of gain made by the various levels. It follows that the projected cost for one-unit-of-gain ranged from a low of $744 per pupil for the third grade to a high of $3,177 for the sixth grade.

XII. RECOMMENDATIONS

The low scores of the first grade pupils on the Metropolitan Readiness Tests (MRT) and the Metropolitan Achievement Tests (MAT) certainly should receive careful consideration. Seemingly, effort should be made in the future to (1) encourage all eligible pupils in Hardnett Elementary School area to attend kindergarten, (2) evaluate the kindergarten activities so that it provides a well-rounded readiness program, and (3) utilize test scores and other means of assessment as a basis for providing more individualized activities for first grade pupils to insure that the educational needs of each pupil are considered.

It is recommended that efforts be made to determine what factors contributed to the significant gains made by pupils in some grades. This may assist in identifying the factors which contributed to the low rate of gain made by pupils in other grades. Further, such an evaluation may assist the school staff in developing a program wherein each grade level would more nearly approach 100 per cent of the expected gain. Program variables which may warrant consideration here would be (1) pupils' pretest performance, (2) teaching procedures and materials, (3) teaching training in reading, (4) the amount of time devoted to the actual teaching of reading skills, and (5) the cost per unit gain in achievement.

Finally, an overall, comprehensive self-evaluation is needed at Hardnett. There seems to be several inconsistent, irregular, or unusual relationships. Some of these are in areas such as performance among the grades, organizational climate, use of diagnostic-prescriptive instructional procedures, clear delineation of behavioral objectives for pupils to accomplish, and a systematic process to develop and operate a preventive instructional program. A well-planned approach to obtaining improvements is strongly urged.